# Listeria Monocytogenes

Notes:

1. L. Monocytogenes can grow at refrigerator temperature and is usually acquired from foods
2. Main diseases caused by L. Monocytogenes:
   1. Early onset disease in newborns- sepsis / meningitis
   2. Late onset disease in newborns – poor hygiene / poor nursing care by colonized mother🡪 meningitis
   3. Adult: food borne disease:
      1. Pregnant women have flu-like illness
      2. Fetal loss may occur
      3. Elderly and immunocompromized: Bacteremia / meningitis (especially transplant patients)
      4. Immunocompetent: febrile gastroenteritis

Presentation:

1. 64 yr old with 5 day hx of fever, headache, confusion
2. had diarrhea for 2 days🡪 resolved. History of rheumatoid arthritis🡪 has been taking prednisone for several months.
3. PE: unable to answer simple questions, appeared agitated

Listeria Monocytogenes:

1. Gram positive, small rods with rounded ends
2. facultatively anaerobic
3. Blood / CSF cultures grow well on BA medium🡪 see Beta hemolysis
4. motile with tumbling motility in wet mounts
5. produce acid from glucose
6. Somatic “O” and flagellar “H” Ag determine serotypes (only a few cause human disease)

Epidemiology:

1. responsible for food-borne illness in adults and meningitis in newborns
2. found in soil and animal reservoirs🡪 processed meat and dairy products can support growth
3. risk groups: pregnant women, fetuses, neonates, immunocompromized patients (seen in AIDS), and the elderly

Pathogenesis:

1. Is an intracellular pathogen🡪 can cause systemic infections in those with defective cell-mediated immunity
2. bacteria induces host cell to engulf it using protein “internalin”🡪 bacteria survive and spread:
   1. listeriolysin O and phospholipases allow escape from the phagosome🡪 multiply in cytoplasm
   2. stimulate nucleation and rearrangement of host actin🡪 enables cell to cell spread via pseudopods that extend into adjacent cells
   3. Cellular actin “tails” and listerial phospholipase are required for spread
3. Host defenses: primarily T cell mediated activation of MACs by lymphokines
4. MACs🡪 kill bacteria and control infection. If not controlled🡪 see microabscesses and granulomas contribute to pathology

Treatment / Prevention:

1. Penicillin or ampicillin (usually in combination with Aminoglycoside) is DOC
2. There are no vaccines. Avoid eating raw / partially cooked animal products.